

REMARKS

Upon entry of this amendment, claims 1-20 are all the claims pending in the application. Claims 11-20 have been added. Applicants note that a number of editorial amendments have been made to the specification and abstract for grammatical and general readability purposes. No new matter has been added.

Applicants thank the Examiner for returning the PTO-1449 form submitted with the Information Disclosure Statement filed on April 25, 2003. Applicants note, however, that while the Examiner has initialed next to each of the references, the Examiner has not signed and entered the date at the bottom of the form as required by MPEP § 609 C(2). Accordingly, Applicants kindly request the Examiner to initial next to the references, sign and date the form, and return such form with the next Office paper. For the Examiner's convenience, Applicants are enclosing herewith a copy of the PTO-1449 form.

The Examiner has objected to the title as not being descriptive. Applicants have hereby amended the title in a manner to overcome this objection. Accordingly, Applicants respectfully request that the objection be reconsidered and withdrawn.

I. Claim Objections

The Examiner objects to claims 3-10 due to minor informalities. In particular, the Examiner objects to claims 3-10 because these claims utilize "wherein clauses" rather than positively recited elements. Applicants respectfully disagree.

A dependent claim is not improper simply because there is a question as to (1) the significance of the further limitation added by the dependent claim, or (2) whether the further

limitation in fact changes the scope of the dependent claim from that of the claim from which it depends.

In particular, as stated in MPEP §608.01(n)(III), the test as to whether a claim is a proper dependent claim is that it must include every limitation of the claim from which it depends, or in other words, that it shall not conceivably be infringed by anything which would not also infringe the base claim. The test is not one of whether the claims differ in scope. MPEP §608.01(n)(III).

Furthermore, a patent applicant is free to recite features of an apparatus either structurally or functionally. See *In re Schreiber*, 128 F.3d 1473, 1478 (Fed. Cir. 1997). There is nothing inherently wrong with defining some part of an invention in functional terms. "A functional limitation must be evaluated and considered, just like any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used." MPEP §2173.05(g)(emphasis added).

Therefore, because claims 3-10 cannot be infringed without also infringing base claim 1, Applicants submit that claims 3-10 are proper dependent claims under 35 U.S.C § 112, fourth paragraph. Accordingly, Applicants respectfully request the Examiner to reconsider and withdraw the objection of claims 3-10. If the Examiner maintains the objection, Applicants respectfully request support for the Examiner's position that claims 3-10 are improper.

II. Claim Rejections under 35 U.S.C. § 103(a)

A. The Examiner has rejected claim 1 under 35 U.S.C. § 103(a) as being unpatentable over Katoh (U.S. 6,088,311) in view of Leonowich (EP 0 585 090) and Ishibashi et al. (U.S. 6,134,197). Applicants respectfully traverse this rejection on the following basis.

Claim 1 recites the feature of a gain command unit for designating a loop gain of a clock extracting circuit in accordance with the speed signal outputted from the speed sensor. The Examiner recognizes that Katoh does not teach or suggest such a feature. The Examiner, however, applies Leonowich and Ishibashi and alleges that these references cure the deficiency of Katoh. Applicants respectfully disagree.

In particular, the Examiner alleges that Ishibashi teaches a system that alters the gain based upon the detected linear velocity. However, in direct contrast to the assertion of the Examiner, Applicants note that Ishibashi specifically discloses that the gain is optimized irrespective of the linear velocity, not dependent upon linear velocity (see col. 13, lines 26-27). Accordingly, Applicants submit that the cited prior art fails to teach or suggest the feature of a gain command unit for designating a loop gain in accordance with the speed signal, as recited in claim 1.

In addition, the Examiner asserts that it would have been obvious to one of ordinary skill in the art to combine Ishibashi with the base system of Leonowich and Katoh because it would have been beneficial to control the gain of the base system with respect to the detected speed of the signal (see Office Action at page 4). Applicants note, however, that Leonowich discloses a system which maintains a loop gain constant with changes of the transition density of an input signal (see paragraph [0015] and col. 4, lines 29-32).

Therefore, contrary to the assertion of the Examiner, Applicants submit that there would be no motivation to change the loop gain of Leonowich based upon the detected speed of a signal. Indeed, such a modification to Leonowich would render Leonowich's system inoperable

for its intended purpose; that is, maintaining the gain constant. As stated in MPEP 2143.01, if a proposed modification would render the prior art invention being modified inoperable for its intended purpose, then there is no suggestion or motivation to make the proposed modification.

Accordingly, Applicants respectfully submit that the cited prior art fails to render obvious the feature of a gain command unit for designating a loop gain in accordance with a speed signal output from a speed sensor, as recited in claim 1.

In addition, claim 1 recites that the gain command unit issues a gain command such that the loop gain of the clock extracting circuit secures a desired operating point in accordance with a read rate of the information signals. The Examiner, however, has not addressed this feature of the claim in the Office Action. Applicants respectfully submit that the cited prior art fails to teach, suggest or render obvious such a feature.

Applicants note that the above-mentioned feature is a functional limitation of the claim which must be considered and evaluated just like any other limitation. See MPEP 2173.05(g). Accordingly, if the Examiner maintains the rejection, Applicants respectfully request the Examiner to point out the passages in the cited prior art that are being relied upon as teaching this feature.

In view of the foregoing, Applicants submit that the cited prior art fails to teach, suggest, or otherwise render obvious all of the features of claim 1, and therefore, respectfully request that the rejection be reconsidered and withdrawn.

B. The Examiner has rejected claims 2-10 under 35 U.S.C. § 103(a) as being unpatentable over Katoh (U.S. 6,088,311) in view of Leonowich (EP 0 585 090) and Ishibashi et al. (U.S. 6,134,197), and further in view of Okada et al. (U.S. 6,175,542). Applicants respectfully traverse this rejection on the following basis.

Claim 2 recites the feature of a gain command unit for designating a loop gain of a clock extracting circuit in accordance with the speed signal outputted from the speed sensor. As discussed above with respect to claim 1, Applicants submit that the combination of Katoh, Leonowich and Ishibashi fails to teach, suggest or render obvious such a feature. Further, Applicants submit that Okada fails to cure these deficiencies of Katoh, Leonowich and Ishibashi. Applicants note that Okada was relied upon in the Office Action solely for the teaching of a numerical control oscillator and a digital filter.

In addition, claim 2 recites the feature of a multiplier for changing a multiplication factor in accordance with a gain command of the gain command unit. The Examiner, however, has not addressed this feature of the claim in the Office Action. Applicants note that while Okada, for example, discloses the use of a multiplier, this multiplier does not change a multiplication factor in accordance with a gain command of a gain command unit, as recited in claim 2.

Further, claim 2 recites that the gain command unit issues a gain command such that the loop gain of the clock extracting circuit secures a desired operating point in accordance with a read rate of the information signals. For at least the same reasons as discussed above with respect to claim 1, Applicants submit that the cited prior art fails to teach or suggest such a feature.

In view of the foregoing, Applicants submit that the cited prior art fails to teach, suggest or otherwise render obvious all of the features of claim 2. Therefore, Applicants respectfully request that the Examiner reconsider and withdraw the rejection.

Claims 3, 5, 7 and 9 depend from claim 1, and claims 4, 6, 8 and 10 depend from claim 2. Accordingly, Applicants submit that these claims are patentable at least by virtue of their dependency.

In addition, regarding claims 3-10, the Examiner alleges that because no additional positively recited elements are recited, that the applied prior art inherently meets the limitations of these claims. Applicants respectfully disagree and submit that such features are clearly not inherent in the applied prior art. For example, none of the applied prior art references even remotely suggest the claimed features relating to “a plurality of speed ranges” as set forth in claims 3-6, a “predetermined reference value” as set forth in claims 3-6, or a “predetermined period” as set forth in claims 7-10.

In addition, Applicants note that when “relying on the theory of inherency, the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.” See MPEP§ 2112. Here, since the Examiner has not come forward with any factual basis or technical reasoning as to why the features must necessarily be present, Applicant submits that the Examiner has not established that all of the limitations of claims 3-10 are inherent in the applied prior art.

Further, Applicants note that claims 3-10 are drafted in terms so as to define how the present invention functions (i.e., in functional terms). As discussed above, a patent applicant is free to recite features of an apparatus either structurally or functionally. See *In re Schreiber*, 128 F.3d 1473, 1478 (Fed. Cir. 1997). As set forth in MPEP §2173.05(g), a “functional limitation is an attempt to define something by what it does, rather than by what is.” Further the MPEP makes clear that a “functional limitation must be evaluated and considered, just like any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used.” MPEP §2173.05(g)(emphasis added).

Moreover, Applicants submit that claims 3-10 comply with the requirements of 35 U.S.C. §112, second paragraph. The primary purpose of the “requirement of definiteness of claim language is to ensure that the scope of the claims is clear so that the public is informed of the boundaries of what constitutes infringement of the patent.” See MPEP §2173. Here, Applicants submit that the limitations set forth within claims 3-10 are clear such that the boundaries of what would constitute infringement of the patent is plain, and that Applicants have not otherwise indicated that the invention is to be of a scope different from that defined in the claims.

In view of the foregoing, Applicants respectfully submit that claims 2-10 are patentable over the cited prior art, an indication of which is respectfully requested.

III. New Claims

Claims 11-20 are added as new claims. Claims 11-20 correspond to claims 1-10 but do not recite any means plus function limitations therein. Applicants respectfully submit that claims 11-20 are patentable for at least the same reasons as discussed above regarding claims 1-10.

IV. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may best be resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone listed below.

Respectfully submitted,

Masayoshi NAKAMURA et al.

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FORM PTO 1449 (modified)

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICELIST OF REFERENCES CITED BY APPLICANT(S)
(Use several sheets if necessary)

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Masayoshi NAKAMURA et al.FILING DATE
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U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	AA	6,088,311	7/2000	Katoh			
	AB	5,636,196	6/1997	Kumagai			
	AC	5,604,771	2/1997	Quiros			
	AD	5,959,954	9/1999	Yamamuro			
	AE						
	AF						
	AG						
	AH						
	AI						

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FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO	
	AJ	693 25 685	6/2000	DE				
	AK	0 585 090	7/1999	EP				
	AL							
	AM							
	AN							

OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)

	AO	
	AP	
	AQ	

EXAMINER

DATE CONSIDERED

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.